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EXAMINER

AUGHENBAUGH, WALTER

ART UNIT PAPER NUMBER

1772

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6

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/993,733

Applicant(s)

JOHNSON, GREGORY D.

Examiner

Walter B Aughenbaugh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 April 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 and 14-42 is/are pending in the application.
- 4a) Of the above claim(s) 29-38 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 14-42 is/are rejected.
- 7) ☒ Claim(s) 21 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Acknowledgement of Applicant's Amendments

1. The amendments made in the specification given on page 2 of Paper 4 have been received and considered by Examiner.
2. The amendments made in claims 1, 4-6, 9, 11, 12, 18, 21, 22 and 24 given on pages 3-5 of Paper 4 have been received and considered by Examiner.
3. The cancellation of claim 13 in Paper 4 has been acknowledged by Examiner.
4. New claims 39-42 presented on page 5 of Paper 4 have been received and considered by Examiner.

Allowable Subject Matter

5. Claim 21 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and if the language of claim 21 is amended as requested in the 35 U.S.C. 112 rejection to claim 21 as provided below in this Office Action (Paper 5).

WITHDRAWN OBJECTIONS

6. The objection to the specification made of record in paragraph 8 of Paper 3 has been withdrawn to Applicant's amendments in Paper 4.

WITHDRAWN REJECTIONS

7. The 35 U.S.C. 112 rejection to claims 4, 6, 11, 12, 22 and 24 made of record in Paper 3 have been withdrawn due to Applicant's amendments in regard to claims 4, 6, 22 and 24, and due to Applicant's arguments in regard to claims 11 and 12.

8. The 35 U.S.C. 102(b) rejection to claims 1-6, 8-10, 22 and 25-28 made of record in Paper 3 has been withdrawn due to Applicant's amendments to claim 1 in Paper 4.
9. The 35 U.S.C. 103(a) rejection to claims 7, 11 and 12 made of record in Paper 3 has been withdrawn due to Applicant's amendments to claim 1 in Paper 4.
10. The 35 U.S.C. 103(a) rejection to claims 14-17 made of record in Paper 3 has been withdrawn due to Applicant's amendments to claim 1 in Paper 4.
11. The 35 U.S.C. 103(a) rejection to claim 18 made of record in Paper 3 has been withdrawn due to Applicant's amendments to claim 1 in Paper 4.
12. The 35 U.S.C. 103(a) rejection to claims 19 and 20 made of record in Paper 3 has been withdrawn due to Applicant's amendments to claim 1 in Paper 4.
13. The 35 U.S.C. 103(a) rejections to claim 23 and the rejection to claim 24 made of record in Paper 3 has been withdrawn due to Applicant's amendments to claim 1 in Paper 4.

REPEATED REJECTIONS

14. The 35 U.S.C. 112 rejection to claims 18 and 21 made of record in Paper 3 have been repeated. Specifically, in regard to claim 18, the indefiniteness of the recitation that "there are two of said bends" made of record in Paper 3 was not addressed in Paper 4. The relationship between the two bends and how this structure contributes to the structure of the "double-thick flange" is unclear, as previously made of record in Paper 3. In regard to claim 21, some limitations of claim 21 are written as method limitations; the language of these limitations has not been amended to positively recite the structure of the concrete formwork panel as requested in Paper 3. The reasons for rejection of claims 18 and 21 under 35 U.S.C. 112 not discussed in this paragraph have been withdrawn due to Applicant's amendments in Paper 4.

NEW REJECTIONS

Claim Rejections - 35 USC § 112

15. Claims 6-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 6-8 recite the limitation "said metal facing layer" in the second line of the claims. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

16. Claims 1-12, 14-17, 22, 25-28 and 39-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sobolev in view of Fitzgerald et al.

In regard to claims 1 and 5, Sobolev teaches a laminate comprising two metal sheets and a plastic core between and bonded to the metal sheets (col. 36, lines 8-12). Sobolev teaches that the metal sheets are steel (col. 9, lines 27-50 and col. 19, lines 47-50). Sobolev teaches that the laminate is used as panels for concrete pouring forms (col. 3, lines 21-25 and line 60). Sobolev teaches that the total thickness of the laminate is less than 2 inches (50.8 mm) (col. 36, lines 10-14); therefore, Sobolev teaches a panel thickness of greater than 7 mm. Sobolev fails to teach that the plastic of the plastic core is high-density polyethylene.

Fitzgerald et al., however, disclose that high-density polyethylene is a plastic that has a suitable rigidity for use in concrete form mold panels (col. 2, lines 10-12 and col. 3, lines 4-15). Therefore, one of ordinary skill in the art would have recognized to have used high-density polyethylene as the plastic of the plastic core of Sobolev since high-density polyethylene is a

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plastic that is notoriously well known as having a suitable rigidity for use in concrete form mold panels as taught by Fitzgerald et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used high-density polyethylene as the plastic of the plastic core of Sobolev since high-density polyethylene is a plastic that is notoriously well known as having a suitable rigidity for use in concrete form mold panels as taught by Fitzgerald et al.

In regard to claims 2 and 3, Sobolev teaches a panel thickness range of 9-15 mm (claim 2) or a panel thickness value of 12 mm (claim 3) (col. 36, lines 10-14).

In regard to claim 4, Sobolev teaches that the weight of the laminate is less than about 3.5 lb./ft.² (col. 4, lines 46-47). Claim 4 as amended requires that the panel weigh less than 77 lb./(8ft.*2ft.), equivalently 77 lb./16ft.², equivalently about 4.8 lb./ft.². Sobolev therefore teaches that the panel has a density such that a panel that is 8 feet by 2 feet weighs 77 pounds or less, i.e. that the panel weighs less than about 4.8 lb./ft.².

In regard to claims 6-8, Sobolev teaches that "each metal sheet has a thickness between about 0.015 inch and about 0.1 inch" (col. 36, lines 10-11). In regard to the metal layer thickness for one of the facing or backing layers of 0.009 inch claimed in claim 6 or the metal layer thickness for one of the facing or backing layers of 0.013 inch claimed in claim 7, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have varied the thickness of one of the facing or backing layers of Sobolev via routine experimentation, such that the thickness of one of the facing or backing layers is less than "about 0.015 inch" as specified by Sobolev as the lower end of the thickness range, in order to achieve the optimal balance of panel rigidity and minimization of metal material used depending on the particular

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desired end use and the required panel rigidity for the particular desired end use, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art in the absence of unexpected results. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In further regard to claim 7, it is Examiner's position that 0.013 inches is "about 0.015 inch" as specified by Sobolev as the lower end of the thickness range. In regard to claim 8, the claimed thickness of "0.019 inch" falls within the bounds set by the thickness range taught by Sobolev.

In regard to claim 10, Sobolev teach that the plastic core is a foam (col. 4, lines 44-45 and col. 12, lines 3-38).

In regard to claims 11 and 12, Sobolev teach that a filler is used in the plastic (resin) core layer of the panel to lower the density of the core and that the filler is a foaming agent or blowing agent conventionally used to foam various resins as known by those skilled in the art or glass microballoon filler having an average diameter of from about 20 microns to about 12 mm (col. 12, lines 3-16). Sobolev teaches that for lower density cores and lighter weight laminates, the microballoons and foaming agents are the preferred density lowering agents. Sobolev teach that the specific gravity of the resin core, which is equivalent to the density of the core layer, should be set in a range from about 0.8 to about 1.3. Sobolev teaches the variation of the density of the core layer via routine experimentation via control of the volume of gas per unit volume of the core layer via use of glass microballoons of a given size or of foaming agents conventionally used to foam resins known by those skilled in the art. It would have therefore been obvious to one of ordinary skill in the art at the time the invention was made to have varied the size of the microballoon filler, and therefore the "gas by volume" value of the foam plastic, or to have

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experimented with different foaming agents and different amounts of a given foaming agent as known by those of ordinary skill in the art as taught by Sobolev, via routine experimentation in order to achieve the optimal “gas by volume” amount as claimed by Applicants, i.e. volume of gas per unit volume of the core layer expressed as a percentage, that achieves the desired laminate weight depending on the desired end result as taught by Sobolev, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art in the absence of unexpected results. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

In regard to claims 14-17, Sobolev fails to teach that the panel is bent to form a flange (as claimed in claim 14), that the flange has openings formed in it (as claimed in claim 15), that the panel is notched at the bend (as claimed in claim 16) or that the bend is a 90° bend (as claimed in claim 17). Fitzgerald et al., however, disclose a panel with V-shaped cross sections 20 and 22 (i.e. notches) where the panel is bent 90° to form a mold with side walls (i.e. flanges) 12 and 14 (col. 3, lines 9-29 and Figures 1, 2 and 6). Fitzgerald et al. disclose openings 42 and 44 formed in flange 12 and openings 46 and 48 formed in flange 14 for removable pins to assure maintaining the assembled state of the mold (col. 3, lines 53-60 and Figures 2 and 6). Therefore, one of ordinary skill in the art would have recognized to have provided a 90° bend in the panel of Sobolev via a notch in order to form a flange and to further provide openings in the flange, since it is notoriously well known in the art to bend concrete form mold panels via a notch and to provide openings in the resulting flanges in order to assure maintaining the assembled state of the mold via pins as taught by Fitzgerald et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided a 90° bend in the panel of Sobolev via a notch in order to form a flange and to further provide openings in the flange, since it is notoriously well known in the art to bend concrete form mold panels via a notch and to provide openings in the resulting flanges in order to assure maintaining the assembled state of the mold via pins as taught by Fitzgerald et al.

In regard to claim 22, Sobolev teaches that the facing has a recessed and a raised portion forming a design (see Fig. 8A, as can be seen most readily at the bottom left-hand corner of Fig. 8A- the metal facing layer is clearly contoured and there is therefore a recessed and a raised portion forming a design. The recitation that the design is “to be impressed in concrete” is an intended use limitation and has therefore been given little patentable weight. Concrete would nonetheless be impressed in the panel having a recessed and a raised portion forming a design shown in Figure 8A since Sobolev teaches that the panel is used as a concrete formwork panel (col. 3, lines 47-62).

In regard to claim 25, Sobolev teaches that the metal layers are bonded to the plastic core with an adhesive (col. 31, lines 39-40).

In regard to claim 26, Sobolev teaches that it is common to join several laminate panels to produce a larger continuous panel (col. 33, lines 23-25), and that conventional rivets or other types of mechanical fasteners are used to fasten the plurality of panels together (col. 33, lines 56-57).

In regard to claims 27 and 28, Sobolev teaches that the panels are fastened to a steel or aluminum frame (col. 2, lines 23-26 and col. 33, lines 66-68).

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17. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sobolev in view of Fitzgerald et al. and in further view of Toedter.

Sobolev and Fitzgerald et al. teach the concrete formwork panel as discussed above. Fitzgerald et al. further teaches that the panel has two bends (see Figures 1, 2 and 6). Sobolev and Fitzgerald et al fail to teach that one of the bends is substantially 180° so that the panel is bent back on itself to form a double-thick flange. Toedter, however, discloses a panel (work sheet, item 200) that is bent back on itself to form a double-thick panel (col. 3, lines 21-39 and Fig. 1, 8 and 10). Toedter discloses that the panel is bent back on itself via grooves (items 222 and 223) that are structurally equivalent to the grooves (items 20 and 22) of Fitzgerald et al. (col. 3, line 41-col. 4, line 40). Toedter discloses that this panel structure results in a building element that has, weight for weight, a greater resistance to crush and shear exerting forces than other known building elements (col. 1, lines 47-65). Therefore, one of ordinary skill in the art would have recognized to have formed the flange (items 12 or 14) of Fitzgerald et al. such that the flange (item 12 or 14) is bent back on itself to form a double-thick flange since it is notoriously well known to form double-thick building elements in order to enhance the resistance to crush and shear exerting forces of the building element as taught by Toedter.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the flange (items 12 or 14) of Fitzgerald et al. such that the flange (item 12 or 14) is bent back on itself to form a double-thick flange since it is notoriously well known to form double-thick building elements in order to enhance the resistance to crush and shear exerting forces of the building element as taught by Toedter.

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18. Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sobolev in view of Fitzgerald et al. and in further view of Lee.

Sobolev and Fitzgerald et al. teach the concrete formwork panel as discussed above. Sobolev and Fitzgerald et al. fail to teach that the panel is bent into a hollow, columnar form (as claimed in claim 19) where the columnar form is cylindrical (as claimed in claim 20). Lee, however, teach a building panel in a form for building columns, where the core is cylindrical (col. 2, lines 60-65). Therefore, one of ordinary skill in the art would have recognized to have bent the panel of Sobolev and Fitzgerald et al. into a hollow columnar form where the columnar form is cylindrical, since it is notoriously well known to bend panels into columnar and cylindrical form in order to use the panels to build columns as taught by Lee.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have bent the panel of Sobolev and Fitzgerald et al. into a hollow columnar form where the columnar form is cylindrical, since it is notoriously well known to bend panels into columnar and cylindrical form in order to use the panels to build columns as taught by Lee.

19. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sobolev in view of Fitzgerald et al. and in further view of Yoshida et al.

Sobolev and Fitzgerald et al. teach the concrete formwork panel as discussed above. Sobolev and Fitzgerald et al. fail to teach that the panel includes a strengthening rib attached to the metal backing layer. Yoshida et al., however, disclose a concrete formwork provided with a plurality of small ribs to strengthen the plate of the formwork (col. 2, lines 48-51). Therefore, one of ordinary skill in the art would have recognized to have attached a strengthening rib to the

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metal backing layer of the panel of Sobolev and Fitzgerald et al. in order to strengthen the panel as taught by Yoshida et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have attached a strengthening rib to the metal backing layer of the panel of Sobolev and Fitzgerald et al. in order to strengthen the panel as taught by Yoshida et al.

20. Claims 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sobolev in view of Fitzgerald et al. and in further view of Gallis et al.

Sobolev and Fitzgerald et al. teaches the concrete formwork panel as discussed above. Sobolev and Fitzgerald et al. fail to teach that the panel includes a strengthening rib attached to the metal backing layer as claimed in claim 23 including a handhold as claimed in claim 24. Gallis et al., however, disclose a concrete wall form assembly having two modular units, each of which consists of stiffening ribs 16a-c for the modular unit 11a and stiffening ribs 16d-f for modular unit 11b (col. 2, lines 41-51 and Figure 1). Gallis et al. disclose that modular units 11a and 11b are provided with a pair of handles 19 which facilitates lifting of the complete unit during erection and dismantling, and that the handles 19 are fixed to the second and sixth ribs of each unit (col. 2, lines 62-67). Therefore, one of ordinary skill in the art would have recognized to have attached a strengthening rib to the metal backing layer of the panel of Sobolev and Fitzgerald et al. in order to strengthen (i.e. stiffen) the panel as taught by Gallis et al., and to have provided a handhold such as the handles of Gallis et al. in order to facilitate lifting of the form assembly during erection and dismantling as taught by Gallis et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have attached a strengthening rib to the metal backing layer of the panel of Sobolev

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and Fitzgerald et al. in order to strengthen (i.e. stiffen) the panel as taught by Gallis et al., and to have provided a handhold such as the handles of Gallis et al. in order to facilitate lifting of the form assembly during erection and dismantling as taught by Gallis et al.

21. Claims 39-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sobolev.

In regard to claim 39, Sobolev teaches a laminate comprising two metal sheets and a plastic core between and bonded to the metal sheets (col. 36, lines 8-12). Sobolev teaches that the laminate is used as panels for concrete pouring forms (col. 3, lines 21-25 and line 60). Sobolev teaches that the plastic core is a foam (col. 4, lines 44-45 and col. 12, lines 3-38). Sobolev fails to explicitly teach that the foam plastic is 32% or more gas, by volume (as claimed in claim 39), or 40% or more gas, by volume (as claimed in claim 40) or 50% or more gas, by volume (as claimed in claim 41). However, Sobolev teach that a filler is used in the plastic (resin) core layer of the panel to lower the density of the core and that the filler is a foaming agent or blowing agent conventionally used to foam various resins as known by those skilled in the art or glass microballoon filler having an average diameter of from about 20 microns to about 12 mm (col. 12, lines 3-16). Sobolev teaches that for lower density cores and lighter weight laminates, the microballoons and foaming agents are the preferred density lowering agents. Sobolev teach that the specific gravity of the resin core, which is equivalent to the density of the core layer, should be set in a range from about 0.8 to about 1.3. Sobolev teaches the variation of the density of the core layer via routine experimentation via control of the volume of gas per unit volume of the core layer via use of glass microballoons of a given size or of foaming agents conventionally used to foam resins known by those skilled in the art. It would have therefore been obvious to one of ordinary skill in the art at the time the invention was made to have varied

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the size of the microballoon filler, and therefore the “gas by volume” value of the foam plastic, or to have experimented with different foaming agents and different amounts of a given foaming agent as known by those of ordinary skilled in the art as taught by Sobolev, via routine experimentation in order to achieve the optimal “gas by volume” amount as claimed by Applicants, i.e. volume of gas per unit volume of the core layer expressed as a percentage, that achieves the desired laminate weight depending on the desired end result as taught by Sobolev, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art in the absence of unexpected results. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

22. Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sobolev and in further view of Fitzgerald et al.

Sobolev teaches the concrete formwork panel as discussed above. Sobolev fails to teach that the plastic of the plastic core is high-density polyethylene. Fitzgerald et al., however, disclose that high-density polyethylene is a plastic that has a suitable rigidity for use in concrete form mold panels (col. 2, lines 10-12 and col. 3, lines 4-15). Therefore, one of ordinary skill in the art would have recognized to have used high-density polyethylene as the plastic of the plastic core of Sobolev since high-density polyethylene is a plastic that is notoriously well known as having a suitable rigidity for use in concrete form mold panels as taught by Fitzgerald et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used high-density polyethylene as the plastic of the plastic core of Sobolev since high-density polyethylene is a plastic that is notoriously well known as having a suitable rigidity for use in concrete form mold panels as taught by Fitzgerald et al.

ANSWERS TO APPLICANT'S ARGUMENTS

23. Applicant's arguments on page 7 of Paper 4 regarding the 35 U.S.C. 102(b) rejection of claims 1-6, 8-10, 22 and 25-28 as anticipated by Sobolev are rendered moot due to the withdrawal of this rejection as necessitated by Applicant's amendment to claim 1.

Applicant incorrectly argues that the limitations of claims 3, 8 and 10 are not taught by Sobolev. In regard to claim 3, Sobolev teaches that the laminate is less than about 2 inches thick (col. 36, lines 8-15). 12mm is 0.47 inches. The limitation of claim 3 is taught by Sobolev. The limitations of claim 8 are taught by Sobolev as made abundantly clear in the 35 U.S.C. 102(b) rejection to claim 8 made of record in Paper 3 and 35 U.S.C. 103(a) rejection to claim 8 made of record in this Office Action (Paper 5). In response to Applicant's argument that "microballoon filled plastic is not the same as foam plastic), Sobolev teaches the use of foaming agents in the place of microballoons, and therefore teaches that the plastic is foam plastic.

24. Applicant's arguments on pages 7-8 of Paper 4 regarding the 35 U.S.C. 103(a) rejection of claims 7, 11 and 12 over Sobolev have been fully considered but are not persuasive.

In regard to the metal thickness, Sobolev does not teach that 0.38 (0.015 inches) is the absolute lowest thickness. Sobolev teaches that the lower end of the thickness range is "about 0.015 inches" (see, for example, col. 36, lines 10-11). Furthermore, decreasing the weight of the panel is a concern of Sobolev (col. 12, lines 36-38), and one of ordinary skill in the art would certainly recognize that decreasing the thickness of the metal layers is a means by which the weight of the panel may be decreased. In response to Applicant's argument that "the patent states that preferably the metal is significantly thicker", this statement does not require that the metal layer is thicker, but is merely a preferred embodiment for a particular intended use. One of

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ordinary skill in the art would recognize that other intended uses would require a thinner metal layer, in addition to the fact that one of ordinary skill in the art would be motivated to decrease the weight of the panel by decreasing the thickness of the metal layers when the intended use allows for thinner metal layers.

Applicant's statement that "Sobolev teaches that the maximum gas core density reduction that is practical is 30%" is incorrect. Applicant cites col. 22, lines 13-15 in connection with this statement. This cited passage does not in any way teach that "the maximum gas core density reduction that is practical is 30%". Sobolev merely reports that "core density reductions of 30% were readily achieved without loss in important laminate properties". This passage does not include any statement that 30% is the maximum core density reduction that is practical. While Sobolev does suggest, in Applicant's words, that "too much density reduction will result in a loss of important laminate properties", no indication is given what is "too much density reduction". A density reduction of 30% is not taught as the density reduction at which "important laminate properties" are lost. Applicant seems to interpret the Sobolev reference as teaching a range of density reduction. Sobolev does not explicitly teach a density reduction range. The 30% density reduction cited in col. 22, lines 13-15 is not taught as either the low value or high value in a range of density reduction values. Sobolev does teach the variation of the volume of gas per unit volume of the foam core layer over a wide range, with a particular goal taught as to decrease the weight of the laminate as discussed in the rejection to claims 11, 12 and 39-41 made of record in this Office Action. This goal would be achieved by increasing the volume of gas per unit volume of the foam core layer, and therefore suggests increasing the "gas by volume" values as claimed by Applicant. The values of 32%, 40% and 50% as claimed by Applicant in claims 39, 11 and

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40, and 12 and 41, respectively, are not excluded from Sobolev's disclosure that "core density reductions of 30% were readily achieved without loss in important laminate properties". In response to Applicant's argument that "blowing the plastic to produce foam was concluded to be less desirable", Sobolev teaches that "for lower density cores and lighter weight laminates the microballoons AND FOAMING AGENTS are preferred" (col. 12, lines 36-38). That is, means other than using microballoon fillers are endorsed by Sobolev to lower the density of the plastic core layer. Sobolev teaches that foaming agents are preferably used to make foamed plastic (without microballoons), and Sobolev therefore teaches foamed plastic. In response to Applicant's argument that In re Boesch is not applicable in this case, Applicant argues that the claimed ranges are outside a range that is not taught by Sobolev. Applicant cannot accurately argue that the values of 32%, 40% and 50% are outside the range taught by Sobolev, because Sobolev does not teach a range. Sobolev, however, does teach the variation of the volume of gas per unit volume of the foam core layer VIA ROUTINE EXPERIMENTATION over a wide range (col. 12, lines 3-38), with a particular goal taught as to decrease the weight of the laminate as discussed in the rejection to claims 11, 12 and 39-41 made of record in this Office Action. Applicant's statement that "Sobolev teaches that, even with a volume percentage of gas under 30% foam plastic is undesirable for laminates" is not an accurate statement. Sobolev does not teach that foam plastic is undesirable; rather Sobolev endorses foam plastic (formed with a foaming agent) to decrease the density of the plastic core layer.

Applicant's arguments on page 9 of Paper 4 regarding the 35 U.S.C. 103(a) rejection of claims 13-18 over Sobolev in view of Fitzgerald have been fully considered but are not persuasive.

In response to Applicant's argument that "neither Sobolev nor Fitzgerald et al. teach the use of high-density polyethylene in a metal-plastic laminate", Sobolev teaches the laminate structure as claimed by Applicants and also teach that a polymer is selected from any of the polymers that provide the desired properties (col. 12, lines 39-42). Therefore, Sobolev teach that a wide variety of polymers may be selected depending on the particular desired end use of the laminate. Fitzgerald et al. establish high-density polyethylene as a notoriously well known polymer of sufficient rigidity for use in concrete form mold panels as made of record in the art rejection of claim 13 in Paper 3 and the art rejection of claim 1 in this Office Action (Paper 5). Therefore, one of ordinary skill in the art is more than sufficiently motivated to use the high-density polyethylene of Fitzgerald et al. as the core of Sobolev. One of ordinary skill in the art is well aware that "not all materials, and not even all plastics, are suitable for forming laminations" as Applicant points out, and furthermore, this argument is irrelevant because the extent to which layers of different materials are compatible with each other is readily determined via routine experimentation. A prima facie case of obviousness is indeed made contrary to Applicant's assertion that a prima facie case of obviousness is not made because choosing a polymeric material that is notoriously well known as a material of suitable rigidity for use as a concrete form mold panel that is also compatible with metal and steel layers as in the laminate taught by Sobolev via routine experimentation is well within the ability of one of ordinary skill in the art. Applicant's argument that "while steel is within the "range" of materials suggested by Sobolev, none of the examples in Sobolev utilize steel, and no reason that steel is particularly suitable for for concrete forms is given in Sobolev" is incorrect. An example of Sobolev teaches steel as the metal layers (see col. 19, lines 47-50). Even if an example using steel was not taught, this

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argument would have been irrelevant because Sobolev plainly teaches steel as a metal for use as the metal layers of the laminate of Sobolev. Applicant points out that “the only mention of copncrete formwork in Sobolev is one line”; this is a sufficient teaching. In response to Applicant’s argument that “there is no suggestion in either of the references or their combination that the particular lamination combination of steel and high-density polyethylene is useful as a concrete formwork”, a combination of Sobolev and Fitzgerald et al. teaches the combination of steel and high-density polyethylene useful as a concrete formwork as is sufficiently explained above and in the 35 U.S.C. 103(a) rejection of claim13 made of record in Paper 3 and in the 35 U.S.C. 103(a) rejection of claim1 made of record in this Office Action (Paper 3).

25. The declaration of Gregory D. Johnson has been received and considered by Examiner. The statements made therein have been given little weight since no data is provided to support the statements made therein. Examiner further wishes to make it clear on the record that the declaration is made by Applicant.

Conclusion

26. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

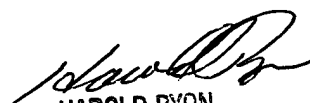
27. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter B Aughenbaugh whose telephone number is 703-305-4511. The examiner can normally be reached on Monday-Friday from 9:00am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached on 703-308-4251. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

wba
06/30/03

WBA


HAROLD PYON
SUPERVISORY PATENT EXAMINER
1772

8/30/03